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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/901,636 | 07/11/2001 | Thomas Malzahn | | 7902 |

7590 01/29/2003

Felix J. D'Ambrosio
JONES, TULLAR & COOPER, P.C.
Eads Station
P.O. Box 2266
Arlington, VA 22202

[REDACTED] EXAMINER

JACKSON, ANDRE K

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2856

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|-------------------|-----------------|--|
| Application No. | Applicant(s) | |
| 09/901,636 | MALZAHN, THOMAS | |
| Examiner | Art Unit | |
| Andre' K. Jackson | 2856 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 December 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____.
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locke in view of Bellee et al.

Regarding claim 1, Locke discloses a “Method and apparatus for material level measurement using stepped frequency microwave signals” which has a signal-generating unit (8), an input coupling unit (12), an antenna (11), and a receiving and evaluating unit (4). Locke does not disclose a dielectric layer containing a feed structure and a plurality of cutouts. However, Bellee et al. discloses a “Dual polarized image antenna” which has a dielectric layer containing a feed structure (25) and a plurality of cutouts (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Locke to include a dielectric layer containing a feed structure and a plurality of cutouts as taught by Bellee et al. since multiple frequencies can be used with this antenna.

Regarding claim 2, Locke discloses slot shaped recesses that are substantially radial (Figure 4).

Regarding claim 3, Locke discloses where the dielectric layer defines a center with one group of cutouts arranged at approximately a first radius from the center of the dielectric layer and at least one further group of cutouts arranged at approximately a second radius from the center of the dielectric layer (Figure 4).

Regarding claim 4, Locke discloses where one group of cutouts are spaced from the cutouts of the first group (Figure 4)

Regarding claim 5, Locke does not disclose the dimensions of the slots. However, it is considered a design choice and clearly within the preview of the skilled artisan to have the slots made a particular size.

Regarding claim 6, Locke does not disclose a dielectric layer connected to at least one dielectric on the side containing the cutouts. However, Bellee et al. does disclose a dielectric layer connected to at least one dielectric on the side containing the cutouts (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Locke to include a dielectric layer connected to at least one dielectric on the side containing the cutouts as taught by Bellee et al. since they are from the same field of endeavor.

Regarding claim 7, neither Locke nor Bellee et al. disclose where the cutouts and feed structure are applied to at least one dielectric layer

by etching. However, it is considered a design choice and clearly within the preview of the skilled artisan to have the cutouts and feed structure applied to at least one dielectric layer by etching.

Regarding claim 8, Locke does not disclose where at least one dielectric layer and dielectric protective layer comprise a circular disk. However, Bellee et al. does disclose where at least one dielectric layer and dielectric protective layer comprise a circular disk (Figure 1). Therefore, the skilled artisan would have been inclined to modify Locke to include where at least one dielectric layer and dielectric protective layer comprise a circular disk as taught by Bellee et al. since they are from the same field of endeavor.

Regarding claim 9, Lock discloses where measuring signals comprise signals in the broadband range.

Regarding claim 10, Locke discloses where the antenna and its cutouts cooperate where the antenna emits measuring signals of a selected mode.

Response to Arguments

3. Applicant's arguments filed 12/16/02 have been fully considered but they are not persuasive.

Regarding claim 1 Applicant has argued that the reference Belle et al. does not teach cutouts having at least one of different dimensions and

shapes. Bellee et al. does disclose this feature of the cut outs being of different dimensions. In Figure 1 it appears that (40) and (45) are of the same dimension and shape, however, in Figure 5 it is shown that (40) and (45) both have different depths, which constitute different dimensions.

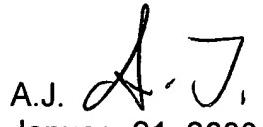
4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Fri. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are N/A for regular communications and N/A for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A.J. 
January 21, 2003


DANIEL S. LARKIN
PRIMARY EXAMINER